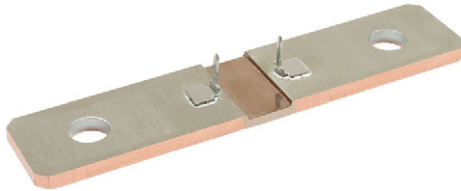




## Power Metal Strip® Shunt Resistor With Two Sense Pins and Sn Plated Terminals, Very Low Value (50 $\mu\Omega$ , 100 $\mu\Omega$ , 125 $\mu\Omega$ , and 250 $\mu\Omega$ )



### FEATURES

- High power to resistor size ratio
- Sense pins allow for consistent contact location
- Sn plating assists with PCB mounting and corrosion protection
- Proprietary processing technique produces extremely low resistance values
- Welded terminal to element construction
- Solid metal manganese-copper alloy resistive element with low TCR ( $< 20 \text{ ppm}/^\circ\text{C}$ )
- Very low inductance ( $< 5 \text{ nH}$ )
- Low thermal EMF (as low as  $< 1 \text{ } \mu\text{V}/^\circ\text{C}$ )
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### LINKS TO ADDITIONAL RESOURCES



### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70^\circ\text{C}}$ W	TOLERANCE $\pm \%$	RESISTANCE VALUE RANGE <sup>(1)</sup> $\Omega$	RESISTANCE VALUES CURRENTLY AVAILABLE <sup>(2)</sup> $\Omega$	WEIGHT (typical) g
WSBS8518...60	8518	36	5, 10	50 $\mu$ to 1000 $\mu$	50 $\mu$ , 100 $\mu$ , 125 $\mu$ , 250 $\mu$	50 $\mu$ = 38.4, 100 $\mu$ / 125 $\mu$ = 36.9, 250 $\mu$ = 34.2

#### Notes

- (1) Please reference WSBS8518...35 datasheet ([www.vishay.com/doc?30355](http://www.vishay.com/doc?30355)) for resistance values 500  $\mu\Omega$  to 1000  $\mu\Omega$   
 (2) Other values may be available, contact factory

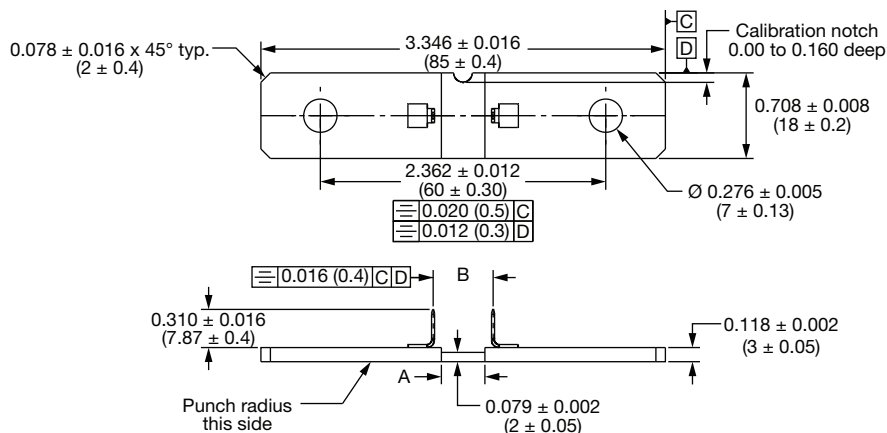
### TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/ $^\circ\text{C}$	$\pm 200$ for 50 $\mu\Omega$
		$\pm 175$ for 100 $\mu\Omega$ , 125 $\mu\Omega$
		$\pm 110$ for 250 $\mu\Omega$
Temperature coefficient (element material)	ppm/ $^\circ\text{C}$	$\pm 20$
Operating temperature range	$^\circ\text{C}$	-65 to +170
Thermal EMF	$\mu\text{V}/^\circ\text{C}$	$< 1$ for 50 $\mu\Omega$ and $< 3$ for 100 $\mu\Omega$ , 125 $\mu\Omega$ , 250 $\mu\Omega$
Inductance	nH	$< 5$
Maximum current rating	A	$(P/R)^{1/2}$

### GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSBS8518L1000JT60 (WSBS8518...60, 0.0001  $\Omega$ ,  $\pm 5 \%$ , tray pack)

W	S	B	S	8	5	1	8	L	1	0	0	0	J	T	6	0
GLOBAL MODEL				RESISTANCE VALUE				TOLERANCE CODE		PACKAGING CODE				SPECIAL		
WSBS8518				$L = \text{m}\Omega$ L0500 = 0.000050 $\Omega$ L1000 = 0.000100 $\Omega$ L1250 = 0.000125 $\Omega$ L2500 = 0.000250 $\Omega$				J = $\pm 5 \%$ K = $\pm 10 \%$		K = bulk pack T = tray pack				60 = two sense pins attached with plated terminals		

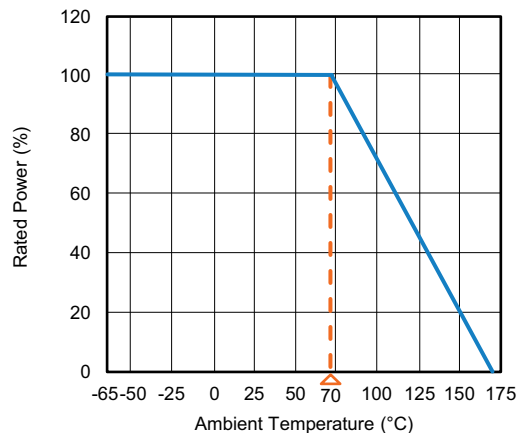
**DIMENSIONS** in inches (millimeters)**Notes**

- Plating on top / bottom is Sn 2.5  $\mu\text{m}$  to 8.0  $\mu\text{m}$  over Ni 0.5  $\mu\text{m}$  to 4.0  $\mu\text{m}$ , edges are not plated
- Minimum pull strength of sense pins is 200 N

RESISTANCE VALUE ( $\mu\Omega$ )	ELEMENT MATERIAL	A REFERENCE	B $\pm 0.005$ ( $\pm 0.13$ )
50	Mn-Cu	0.145 (3.68)	0.135 (3.43)
100	Mn-Cu	0.360 (9.14)	0.495 (12.57)
125	Mn-Cu	0.480 (12.19)	0.585 (14.86)
250	Mn-Cu	0.900 (22.86)	1.028 (26.11)

TOLERANCES ON DECIMALS  
 $.xxx \pm 0.005$  ( $.x \pm 0.1$ )

UNLESS OTHERWISE LISTED

**DERATING****PULSE CAPABILITY**

[www.vishay.com/en/resistors/joulewizard/](http://www.vishay.com/en/resistors/joulewizard/)

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	$\pm 0.5\% \Delta R$
Short time overload	5 x rated power for 5 s	$\pm 0.5\% \Delta R$
Low temperature storage	-65 °C for 24 h	$\pm 0.5\% \Delta R$
High temperature exposure	1000 h at +170 °C	$\pm 1.0\% \Delta R$
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	$\pm 0.5\% \Delta R$
Mechanical shock	100 g's for 6 ms, 5 pulses	$\pm 0.5\% \Delta R$
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	$\pm 0.5\% \Delta R$
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	$\pm 1.0\% \Delta R$
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	$\pm 0.5\% \Delta R$



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